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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/652,316

08/31/2000

Shen Wang

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05/21/2004

PATENT LEGAL STAFF  
EASTMAN KODAK COMPANY  
343 STATE STREET  
ROCHESTER, NY 14650-2201

EXAMINER

JELINEK, BRIAN J

ART UNIT

PAPER NUMBER

2615

2

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/652,316

Applicant(s)

WANG ET AL.

Examiner

Brian Jelinek

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### **DETAILED ACTION**

This is a first office action in response to application no. 09/652,316 filed on 8/31/2000 in which claims 1-5 are presented for examination.

#### ***Drawings***

Figures 1a, 1b, 1c, and 1d should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

The specification is objected to because of the following informalities: it is not clear what the applicant means in lines 24-25 on page 1, i.e. why "8 counts equals 1 millivolt" and why "the hopping magnitude is about 1.75 millivolt".

The specification is objected to because of the following informalities: element 46 references both an "output device" (spec. page 3, lines 15) and an "internal memory" in Fig. 2.

Appropriate correction is required.

#### ***Claim Objections***

Applicant is advised that should claim 3 be found allowable, claim 5 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Katoh et al. (U.S. Pat. No. 5,796,430).

Regarding claim 1, Katoh et al. teaches a method for determining if there is a temperature dependent hopping pixel defect in an image sensor comprising the steps of (a) providing an image sensor in a heated environment having a temperature selected such that hopping pixel defects can be detected (col. 7, lines 3-7); and (b) operating the image sensor and analyzing the output of the pixels of the image sensor to determine if there are hopping pixel defects (col. 4, lines 15-18 and 30-36).

Regarding claim 2, Katoh et al. teaches capturing the output signals in a voltage format (col. 3, lines 35-37) provided by the pixels a number of times and determining if there are hopping pixel defects in the output signals (col. 8, lines 21-34).

Regarding claim 4, Katoh et al. teaches the image sensor is an area sensor (Fig. 3 and col. 4, lines 15-19).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh et al. (U.S. Pat. No. 5,796,430) in view of view of Aufrichtig et al. (U.S. Pat. No. 6,661,456).

Regarding claims 3 and 5, Katoh et al. teaches detecting hopping pixel defects (see the 102 rejection for claim 1). Furthermore, Katoh et al. shows a graph of the amplitudes of the output signal from each pixel (Fig. 4; col. 4, lines 26-36), including any defective pixels. As a result, the relative amplitudes of all of the pixels, including any defective pixels, can clearly be seen, with the hopping pixel having an amplitude that is large relative to the non-defective pixels.

Kato et al. also teaches that pixel defects are identified when the pixel signal value exceeds a threshold (Fig. 4; col. 4, lines 26-36). Although Kato et al. shows a visual display which designates the pixels which have hopping pixel defects and the relative amplitude of such defects, it is not specifically taught that the device of Kato et al. has the ability to produce said visual display.

However, Aufrichtig et al. teaches the visual display of defective pixels (col. 1, line 65 – col. 2, line 2). It is clear that visually displaying the defective pixels detected in Kato et al. would be valuable because it would provide useful insight into the picture quality of the image sensor under test. As a result, it would have been obvious to one of ordinary skill in the art at the time of the invention to visually display the defects of Kato et al. (as taught by Aufrichtig et al.) in order to provide useful insight into the quality of the image sensor. The relative amplitude of each hopping pixel would clearly be present in the display since, by definition from Kato et al., a hopping pixel is one having a relatively large amplitude.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Perino (U.S. Pat. No. 6,593,961) discloses a testing method for identifying defective pixels including a pixel map showing relative amplitudes of output signals and teachings on linear and area image sensors.

Kawabata (U.S. Pat. No. 5,159,457) teaches voltage characteristics and temperature dependence of pixel defects.

Takayama et al. (U.S. Pat. No. 6,683,643) discloses a method to detect pixel defects in an area image sensor including effects of temperature and time.

Levine (U.S. Pat. No. 4,253,120) shows variations of the output signal of pixel elements with time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Jelinek whose telephone number is (703) 305-4724. The examiner can normally be reached on M-F 8:00 am - 4:00 pm.

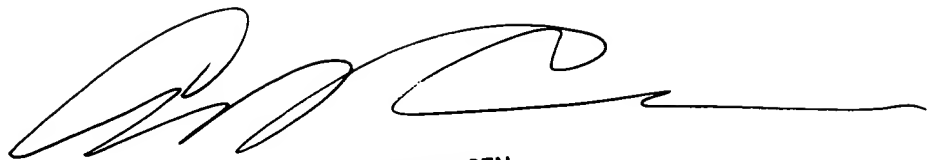
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Brian Jelinek  
5/7/2004

A handwritten signature in black ink, appearing to read 'Andrew Christensen', with a long horizontal flourish extending to the right.

ANDREW CHRISTENSEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600